LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI -A

WATERBODY MANAGEMENT PLAN SERIES

SALINE LAKE

LAKE HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

August 2013- Prepared by:
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District 10

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LAKE HISTORY

GENERAL INFORMATION

Date reservoir formed

Saline Lake was impounded in 1933 with the construction of the Allen Dam in Saline Bayou at 98.0 feet MSL. The Allen Dam also created the Black Lake Complex. In 1959 a new dam was built upstream of Allen Dam effectively separating Saline Lake and the Black Lake Complex. The 1959 dam raised the Saline Lake elevation to 103.0 feet MSL. The current dam and spillway for Saline Lake was completed in 1992 and the elevation remains at 103.0 feet MSL.

Impoundment

Owner – State of Louisiana

Purposes for Creation – The Northwest Louisiana Game and Fish Preserve, including the Black Lake Complex and Saline Lake was created solely to enhance wildlife, fishing and recreational opportunities for the citizens of the state as per Act 191 of 1926 (See History of the Northwest Louisiana Game and Fish Preserve below).

Size

8,400 acres

Watershed

420 square miles (ratio 32:1) of hardwood/pinelands in Natchitoches, Winn and Bienville Parishes.

Pool stage

1933 to 1959 – 98.0 feet MSL
1959 to current – 103.0 feet MSL

Parishes

Natchitoches/Winn

Border waters

None

Spillway description

Saline Lake Dam /Spillway
Length – 400’ Condition – Good

Dam/Spillway Coordinates

The Saline Lake Dam is located 8 miles NE of Clarence, LA in Section 12 and 13, T10N-R6W, in Natchitoches Parish at map coordinates: latitude 31^{o} 51’ 09” N and longitude -92^{o} 55’ 54” W. A map of the Saline Lake Dam location appears in Figure 1.

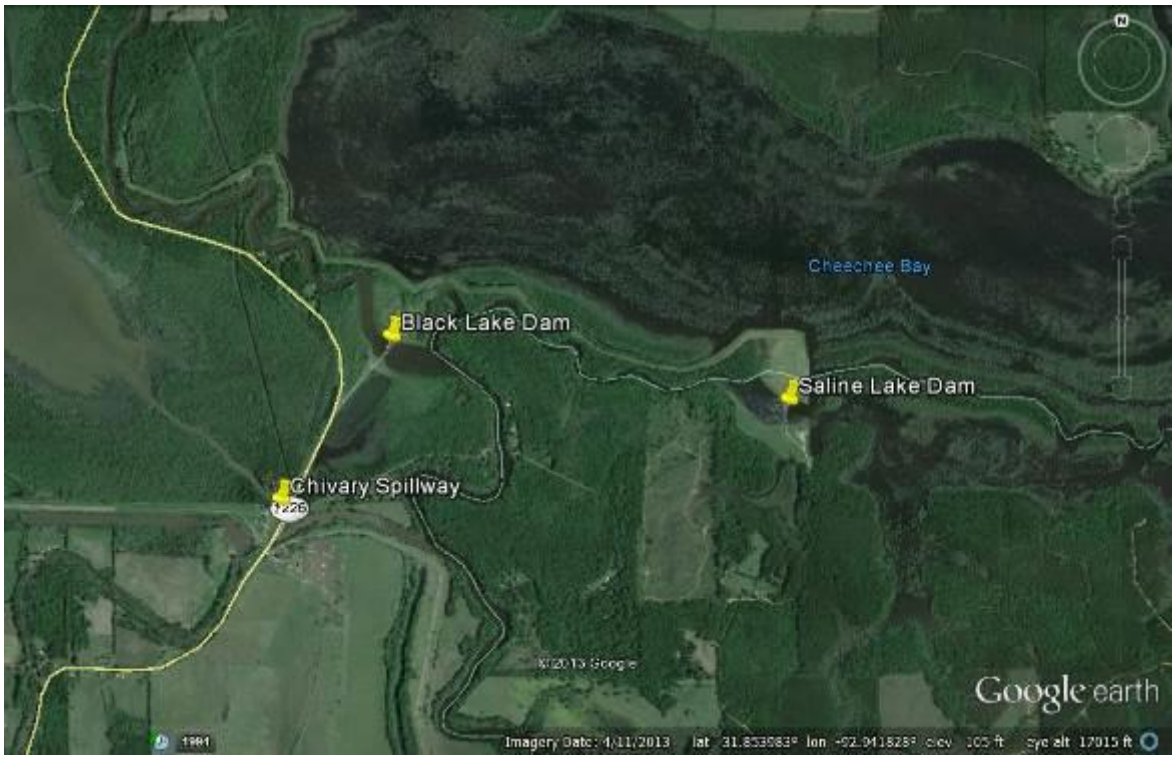


Figure 1. Map of Saline Lake Dam, Winn and Natchitoches Parishes, LA.

Drawdown Structure

Location-Incorporated into the Saline Lake Spillway.

Number of gates – 3 (plus two fish gates located on each end of the spillway). The fish gates are designed to open from the top of the spillway downward. These gates are designed to allow fish, primarily shad, to move into the lake during periods of high water in the Red River.

Gate size – 6' x 6' (fish gates 6' x 3')

Condition – Structure is fulfilling its intended purpose per Louisiana Department of Transportation and Development (DOTD) Dam Inspection and Evaluation Report dated March 27, 2013. A copy of this report appears as **APPENDIX 1.**

Max flow rate – 6,859 cubic feet per second.

Who controls

The Louisiana Department of Transportation and Development (DOTD) are responsible for maintenance and operation of the gates. Primary purpose of the gates is water level manipulation for habitat management. The DOTD operates the gates for lake management as per written requests from the Louisiana Department of Wildlife and Fisheries (LDWF).

Procedure for spillway openings – For lake management objectives, LDWF will initiate recommendations, or consider recommendations from the Saline Lake Game and Fish Preserve Commission (SLGFPC) for a drawdown. If agreed upon, the LDWF Secretary submits a request to the Secretary of DOTD that includes, requested date of opening, water level desired, desired dewater rate, date of gate closure, and purpose for gate operation.

For flood control purposes, operation of the structure gates is directly requested to DOTD by

SLGFPC as per statute below.

RS 38:24

§24. Rules and regulations; inspection of dams

A. ***

B. Notwithstanding any other provisions of law or any rules and regulations to the contrary, the legally constituted boards of commissioners of Black Lake, Clear Lake, and Saline Lake in Natchitoches Parish may recommend directly to the Department of Transportation and Development that the dams situated on said lakes should be opened for flood-control purposes only. The chief engineer, or his authorized representative, shall have the final authority for determining the necessity of opening the dams, and no other department of state government shall be involved in these flood-control activities.

Acts 1991, No. 532, §1; Acts 1995, No. 1049, §1.

LAKE AUTHORITY

History of the Saline Lake Game and Fish Preserve Commission

The Northwest Louisiana Game and Fish Preserve (Preserve) was established by the Louisiana Legislature and was initially placed under the control of the Louisiana Conservation Commission through Act 191 of 1926. The Preserve was initially comprised of three artificially created lakes (Black Lake, Clear Lake, and Saline Lake) and the surrounding lands. It was developed for recreation and for the preservation of wildlife and fisheries. After creation of the Preserve, the State constructed a dam, known as the Allen Dam, to keep water in the lakes from draining. In 1928, the Preserve was placed under the control of the Louisiana Department of Conservation through Act 69 of 1928. In 1946, the Louisiana Legislature created the Northwest Louisiana Game and Fish Preserve Commission (NLG&FC) and granted it authority to administer the Preserve and adopt rules and regulations thereof through Act 120 of 1946. While the NLG&FC was originally placed under the supervision of the Department of Wildlife and Fisheries, the NLG&FC was vested with the *"right, power and authority to sue and be sued as a subdivision of the State"* and to *"purchase, lease or expropriate all property necessary to the erection and maintenance of the Preserve"*. The State of Louisiana retained title to the lakes, as well as the surrounding land and lake bottom. Act 105 of 1976 placed the NLG&FC under control of the Louisiana Wildlife and Fisheries Commission. Additionally, the Act removed Saline Lake from the authority of the NLG&FC and placed it under the authority of the Saline Lake Game & Fish Preserve Commission.

The SLGFPC is comprised of five members serving individual four year terms. Membership consists of three residents of Winn Parish and two residents of Natchitoches Parish. Members are appointed by the respective police juries from each parish.

Association

Saline Lake Game and Fish Preserve Commission
P O Box 847
Winnfield, La 71483

The names and contact information for current members of the SLGFPC are listed in Table 1.

Table 1. Members of the Saline Lake Game & Fish Preserve Commission as of July, 2013.

President Bill Hightower, 125 Camp Allen Rd. Winnfield, LA 71483 Home – 318-789-1171	Larry Thompson 4117 Goldonna Rd. Goldonna, LA 71301	Chad Blundell 256 Blundell Rd. Winnfield, LA 71483
Secretary/Treasurer Richard Bagwell 1691 Brewton Camp Rd. Winnfield, LA 71483	Barry Bolton 117 South Williams Ave. Natchitoches, LA 71457	

Authorization

The Saline Lake Game and Fish Preserve Commission is authorized by Louisiana law as appears in Act 105 of 1976; R.S. 56:801.

ACCESS

Boat Ramps

There are 4 boat ramps available for public use on Saline Lake. There is no fee charged to launch at the ramps. No restroom or vendor facilities are available at the ramps. A map showing the locations of boat ramps at Saline Lake appears as **APPENDIX II**.

Public Piers

No public fishing piers are available at Saline Lake. However, significant shoreline angling activity occurs along the control structure.

State/Federal facilities

Sand Point Boat Launch- is a single lane concrete boat launch. It was built and is maintained by U.S. Forest Service. The ramp is located between Calvin and Goldonna on HWY 156. Turn South on Sand Point Rd.

Saline Bayou north of Saline Lake is dedicated as a National Wild and Scenic River. The U. S. Forest Service Cloud Crossing recreational area is located on Saline Bayou/ Scenic River. Turn North off of HWY 156 onto Parish Road 1233, then turn west on Cloud Crossing Rd.

Artificial Reefs

Due to extensive natural cover, no artificial reefs have been built.

SHORELINE DEVELOPMENT

State/National Parks

None

Shoreline development by landowners

Approximately 30% of the shoreline is developed with camps and residential homes. The

remaining land is either U.S. Forest Service lands or wetlands habitat, prone to frequent flooding. There are boat launches at many of the private camps and homes. There are no private facilities on the lake offering the public an opportunity to purchase bait, tackle, lodging, guides or other amenities.

PHYSICAL DESCRIPTION

Shoreline length

47.8 – miles

Timber type

The Saline Lake watershed consists primarily of mixed pine/hardwood upland timber and pine silviculture.

Average depth

7 feet

Maximum depth

16 feet

Natural seasonal water fluctuation

Annual fluctuations of 2 feet to 3 feet are typical. These fluctuations result from heavy rainfall within the watershed and are short in duration. Water levels below pool elevation rarely occur due to the fact that Saline Bayou, the major tributary stream for Saline Lake, is well supplied by natural springs.

EVENTS/PROBLEMS

Water Level

Saline Lake water level fluctuations can be significant due to the lake's large watershed coupled with influences by Red River water levels downstream of the lake. Heavy rainfall occasionally causes localized flooding of homes and camps in low lying areas independent of influence from the Red River.

Aquatic Vegetation

Historically, Saline Lake has been plagued with nuisance aquatic vegetation of many species. Native submergent vegetation, primarily fanwort and bladderwort, are usually problematic to boating and fishing especially during late summer and early fall seasons. In some years, water hyacinth has inhibited fishing and boating recreation. Common salvinia has been problematic during years following mild winters. Hydrilla can be found in the lake but has not caused problems at this time.

The majority of controversies related to Saline Lake have been associated with scheduled drawdowns. In each instance, shoreline property owners, anglers or waterfowl hunters have been the primary complainants. In most cases, waterfowl hunters have opposed drawdowns based on the fact that lower lake levels prohibit access to and success of duck blinds on the lake. In some cases, the SLFGPC has voted to abandon planned drawdowns for various reasons. No record is found of any successful legal action preventing a drawdown.

Currently (2013) giant salvinia is problematic at Saline Lake. It was first documented in the lake during the summer of 2007 and by the summer of 2008 it had virtually replaced common salvinia. Coverage by giant salvinia has continued to be problematic to date.

HYDROLOGICAL CHANGES

The Allen dam created Saline Lake in 1933 at a pool elevation of 98.0' MSL. A new dam was built in 1959 which raised the MSL to 103.0'. This raised the water elevation 5 feet and substantially increased the size of the lake. Since that time hydrological changes have been minimal. There has been no significant water shed changes or land use practices. Little change in land use practice involving the area surrounding the lake is expected due to the fact that much of the watershed is owned by the U.S. Forest Service.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Vegetation problems in Saline Lake are chronic in nature and have been so for the last 40 years. In years past, most complaints were related to water hyacinth, lotus and a variety of submerged aquatic vegetation including fanwort (*Cabomba caroliniana)*, coontail *(Ceratophyllum demersum)* and bladderwort *(Utricularia spp.)* More recently, giant salvinia *(Salvinia molesta)* has generated the majority of complaints.

Currently Saline Lake is in poor condition overall with regard to aquatic vegetation. Submergent native vegetation is proving to be a nuisance in summer months, primarily in shallow water areas. Extensive aquatic spray efforts limited the regrowth of giant salvinia following an extensive herbicide treatment utilizing Galleon in 2009. Benefits were also realized due to colder than normal winters occurring in 2009/2010 and 2010/2011. A resurgence of giant salvinia was observed in the summer of 2011. Increased efforts utilizing foliar herbicide applications were made during the spring and summer of 2012. A drawdown regime was initiated in 2012. Two consecutive years of drawdowns are planned.

As of September 13, 2013 the total infestation of the major problem plant species at Saline Lake is estimated to be as listed below:

Giant salvinia *(Salvinia molesta)* –2,000acres
Water hyacinth *(Eichhornia crassipes)* –50acres
American lotus *(Nelumbo lutea)* –50acres
Fragrant Water Lily *(Nymphaea odorata)* – 70 acres
Fanwort *(Cabomba caroliniana)* – 300 acres
Coontail *(Ceratophyllum demersum)* – 100 acres
Bladderwort *(Utricularia sp.)* – 120 acres
Duckweed *(Lemna sp.)* – 25 acres

Total vegetative coverage = 2715 acres or 32%.

Currently, all aquatic vegetation found at Saline Lake is considered to be in the nuisance category. No efforts are being considered to introduce or reestablish any aquatic vegetation.

Type map

Vegetation sampling has occurred numerous times in Saline Lake since 1980 due to extensive vegetation problems. Vegetative type map sampling on Saline Lake began in 1980 and occurred in 6 of the next 9 years. Vegetative biomass sampling replaced type mapping in 1998 and was conducted for 6 consecutive years through 2003. Vegetative type map sampling began again in 2006 and has continued as needed to date. The most current typemap is found in **APPENDIX III**. Historical typemaps for Saline Lake appear in **Saline Lake MP-C**.

Biomass

Biomass sampling was conducted annually from 1998 through 2003 in Saline Lake. This method of aquatic vegetation sampling measured the volume of plant material by species and documented fluctuations of submergent vegetation.

Biomass sampling was discontinued in 2003.

Treatment history by year

Biological

Biological controls currently in use at Saline Lake include triploid grass carp (TGC) *(Ctenopharyngodon idella)* and giant salvinia weevils (*Cyrtobagous salviniae*). In 2005 and 2007 TGC were stocked into Saline Lake to provide a biological control agent for submerged aquatic vegetation. Salvinia weevils have been introduced to provide a biological control agent for giant salvinia. Stocking dates and numbers for TGC appear in Table 2. The status of triploid grass carp in Saline Lake is unclear at this time. No apparent impact by the carp on vegetation has been noted.

Table 2. Triploid grass carp stockings at Saline Lake, Winn & Natchitoches Parishes, LA.

Year	Size	Number Stocked
2005	Phase II	7,547
2007	1 year old	29

In order to determine if these carp would remain in the lake during periods of high water, a telemetry study was developed by LDWF. On April 6, 2005, seven thousand-five hundred and forty seven (7,547) TGC were stocked into Saline Lake. These carp were 8 to 16 inches in length and were stocked at two locations in the lake. A subsample of the TGC was implanted with radio transmitters to determine possible escapement from the reservoir.

Two sizes of transmitters were used. The smaller transmitters had a battery life of 103 days and were implanted in fish 12 to 14 inches in length. The larger transmitters were implanted in fish 14 to 16 inches in length and had a battery capacity of 552 days. Saline Lake received 15 small fish and 37 large fish implanted with transmitters.

Saline lake has a spillway designed to allow excess water to flow from the lake. A receiver was permanently mounted at a location downstream of the lake that would record the passage of any carp carrying a transmitter. The receiver was operated by 12 volt batteries and was monitored periodically; batteries were changed approximately every two weeks. The receiver was checked at the time of battery replacement to determine if any carp have been recorded. Roving surveys were also conducted, utilizing boat and airplane to monitor dispersal of the TGC in the waterbody

No passage of transmitters was recorded during the life span of the transmitter batteries.

Salvinia weevil stocking data is given in Table 3.

Table 3. Salvinia weevil stockings by species by year at Saline Lake, Winn & Natchitoches Parishes, LA.

Year	Species	Number Stocked
2007	Common salvinia weevils *(Cyrtobagous sp.)* from FL	Unknown
2008	Giant salvinia weevils (*Cyrtobagous salviniae*)	89/ft.^{3} of host plant
2011	Giant salvinia weevils (*Cyrtobagous salviniae*)	29,141 individuals
2012	Giant salvinia weevils *Cyrtobagous salvinae*	71,400
2013	Giant salvinia weevils *Cyrtobagous salvinae*	46,800 individuals

Chemical

The use of herbicides is an important component of the LDWF integrated pest management program. The proper selection and use of herbicides is essential to achieve cost effective benefits and to avoid damage to non-target species. Each product listed has been approved by the Environmental Protection Agency for aquatic use. Aquatic vegetation is treated according to the standard operating procedures for the application of herbicides as adopted by the LDWF Inland Fisheries Section.

Annual maintenance spraying of water hyacinth, common and giant salvinia and emergent vegetation is conducted as necessary. These foliar applications have been moderately successful in controlling water hyacinth and other emergent vegetation. Historically, foliar herbicide applications have not been successful in controlling giant salvinia on a lake-wide scale but have provided localized control through efforts near boat ramps and residential areas. In 2013, foliar applications made by contract sprayers provided better control of giant salvinia and emergent vegetation than had been noted prior to the use of such wide-scale and intensive treatments.

A water volume treatment utilizing galleon herbicide was conducted in 2009 to help control giant salvinia. This treatment was made in the upper end of the lake and was successful in significantly reducing the presence of all vegetative types within the treatment area. Table 4 depicts herbicide treatments made at Saline Lake from 2005 to 2012.

Table 4. Herbicide applications conducted at Saline Lake, LA during the years 2005 to 2012.

Year	Gallons	Pounds	Acres	Vegetation
2005	635.00		1127.50	Water Hyacinth, Common Salvinia, Water Lily
2006	1093.00		1809.58	Water Hyacinth, Common Salvinia, American Lotus
2007	997.50		1737.20	Water Hyacinth, Common Salvinia, American Lotus, Giant Salvinia
2008	1621.50		2308.17	Common Salvinia, Water Hyacinth, Giant Salvinia, Water Lily, American Lotus
2009	1362.00		6136.87	Giant Salvinia, Water Hyacinth, Common Salvinia
2010	1898.50		2996.61	Giant Salvinia, American Lotus, Water Hyacinth, Alligator Weed
2011	3043.3	101.5	4039.11	Giant Salvinia, Water Hyacinth, American Lotus
2012	2,513		5,612	Giant Salvinia, American Lotus, Water Hyacinth, Water Lily, Sedge, Pennywort
TOTAL	13,163.8	101.5	25,767.04	

HISTORY OF REGULATIONS

Recreational Fishing Regulations

Statewide regulations. http://www.wlf.louisiana.gov/fishing/regulations

Commercial Fishing Regulations

Statewide regulations. http://www.wlf.louisiana.gov/fishing/regulations

DRAWDOWN HISTORY

Since the 1960's numerous drawdown strategies have been employed at Saline Lake ranging from a minimal drawdown of 3' to a maximum drawdown of 11'. Drawdowns at various times of the year have also been tried. Drawdowns for aquatic vegetation control typically have occurred every 3 to 5 years (Table 5). These drawdowns have proven effective at providing short term reductions of submergent vegetation. Saline Lake drawdowns have been controversial and have resulted in oppositions from some users in each case. To date, such opposition has been unsuccessful in stopping drawdowns. Fall/winter drawdowns have proven to be unpopular because approximately 90 duck blinds are permitted annually on the lake. Dewatering the lake restricts access to many of the blinds. Data relative to Saline Lake drawdowns appears in Table 5.

Table 5. Description of Saline Lake, LA, drawdowns from 1973 - 2012.

DATE	PURPOSE	LOWEST LEVEL	GATES OPENED	BACK TO POOL STAGE	NOTES
1973	Weed Control	100 MSL	Fall		
1974	Weed Control	97 MSL	Fall		
1975 (Recommended)	Weed Control	100 MSL	10-01-75		No record of occurrence
1978	Weed Control	100 MSL	Fall		
1979	Weed Control	94 MSL	Unknown		
1982 (Recommended)	Weed Control	96 MSL	06-15-82	12-30-82	No record of occurrence
1987	Shoreline Clearing	96.5 MSL	Spring	Fall	USACE Permit See Attachment "A"
1992	Dam Construction	Unknown	Winter	Winter	
1997	Weed Control	95 MSL	06-16-97	11-01-97	Successful
2001	Weed Control	99 MSL	07-01-01	10-15-01	Cancelled by SLGFPC
2004	Weed Control	97.0 MSL	06-14-04	10-24-04	Successful
2008	Fish Gate Operation	99.5 MSL	04-14-08	04-29-08	Unsatisfactory results
2008	Fish Gate Operation	98 MSL	Unknown	07-19-08	Unauthorized gate operation
2012	Weed Control	95 MSL	09-06-12	01-19-13	Successful
2013	Weed Control	95 MSL	07-01-13	Planned gate closure 01-06-13	

Success

Drawdown success has varied throughout the lake's history. The drawdowns in 1997 and 2004 were deemed successful in reducing problematic vegetation. As typically occurs, benefits in plant reduction were lost in post drawdown year three. The drawdown of 2012 was successful in reducing the coverage of giant salvinia by approximately 50%.

Fishing closure

Historically Saline Lake has remained open to fishing during the drawdowns. However the lake was closed to fishing during the 6 foot drawdown of 2004. This was done at the request of the Saline Lake Commission.

Depth below pool

1973 – 3 feet
1974 – 6 feet
1978 – 3 feet
1979 – 9 feet
1987 – 6.5 feet
1992 – Unknown
1997 – 8 feet
2004 – 6 feet
2008 – 5 feet
2012 – 8 feet

Estimated % of bottom exposed

Six foot drawdown – 50% exposed
Eight foot drawdown – 70% exposed

Fish kills Associated with Drawdowns

No fish kills have been documented in Saline Lake during drawdowns. Anecdotal reports of dead fish were heard following the opening of the control structure in September of 2012 and August of 2013. All reports were of dead fish sighted below the structure and limited to that area of Saline Bayou immediately downstream of the structure. No investigation of this event was made due to the excessive time lapse between the occurrence and knowledge of it by department staff. It is likely that this event was caused by the release of anoxic water through the sluice gates of the dam. The event was noted and adjustments made to future discharge rates to reduce/control the release of anoxic water from the control structure sluice gates.

FISH KILLS/DISEASE HISTORY, LMBV

No disease history documented.
Largemouth bass were tested for LMBV in 2003 all test results were negative.

CONTAMINANTS / POLLUTION

Fish Consumption Advisory Due to Mercury
Issued: 02/11/09
http://www.deq.louisiana.gov/portal/Portals/0/planning/Fish%20Consumption%20Advisory%20Table%20-%203-8-96.pdf

"Women of childbearing age and children less than seven years of age should consume no more than SIX MEALS PER YEAR of largemouth bass, or no more than **three meals per month** of carp, freshwater drum, longear sunfish, or warmouth combined, or no more than **two meals per month** of black crappie, or no more than **one meal per month** of bowfin (choupique, grinnel) or spotted bass combined, from the advisory area.

Other adults and children seven years of age and older should consume no more than THREE MEALS PER MONTH of bowfin (Choupique, Grinnel) or spotted bass combined, or no more than TWO MEALS PER MONTH of largemouth bass from the advisory area."

Water quality

Saline Lake is currently listed as impaired by the EPA because of mercury concentrations. Water quality concerns noted for the watershed and the related US Environmental Protection Data is provided in the attached LADEQ link: http://www.deq.louisiana.gov/portal/tabid/2201/Default.aspx

BIOLOGICAL

Fish samples

Historical, present and future fish samples taken from Saline Lake are listed in Table 6.

Table 6. Historical, present and scheduled sampling by year at Saline Lake, LA.

YEAR	SAMPLE TYPE AND (NUMBER OF SAMPLES)
1970	Rotenone, (4) samples, one acre, two day pickup
1973	Rotenone, (4) samples, one acre, two day pickup
1974	Rotenone, (2) samples, one acre, two day pickup
1975	Rotenone, (3) samples, one acre, two day pickup
1979	Rotenone, (4) samples, one acre, two day pickup
1981	Rotenone, (3) samples, one acre, two day pickup
1983	Rotenone, (3) samples, one acre, two day pickup
1988	Rotenone, (2) samples, one acre, two day pickup
1990	Electrofishing, Age and Growth, Genetics
1991	Electrofishing, Gill Net
1994	Electrofishing

1995	Electrofishing
1997	Seine
1999	Seine
2000	Electrofishing, Seine
2001	Seine
2003	Electrofishing, Genetics
2005	Electrofishing, Age and Growth, Genetics
2007	Electrofishing, Genetics
2009	Electrofishing, Seine, Lead nets
2010	Electrofishing
2011	Electrofishing
2012	Electrofishing
2013	Electrofishing
2014	Electrofishing
2015	Electrofishing
2016	Electrofishing

Lake records

No official records maintained.

Stocking History

Table 5. Historical and current LDWF fish stockings by species by year at Saline Lake, LA.

Year	Florida bass (FLMB)	Channel Catfish	Blue Catfish	Triploid Grass Carp
1987	0	14,000		0
1988	57,000	32,000		0
1989	37,000	0		0
1990	0	88,100		0
1995	0	57,316	17056	0
1998	0	26,838		0
1999	132,808	11,109		0
2000	86,460	0		0
2001	72,180	0		0
2005	83,464	0		7,547
2006	84,032	30,097		0
2007	84,026	75,519		29
2009	84,306	29,115		0
2010	74,630	0		0

2011	86,730	84,659		0
TOTAL	**882,636**	**84,659**		**7,576**

Species profile

A family and species list of fishes collected by LDWF or are known to occur in the Saline Bayou watershed is found in Table 6 below.

Table 6. List of fish species collected by LDWF or are known to occur in the Saline Lake watershed.

Lamprey Family, PETROMYZONTIDAE
Southern brook lamprey, *Ichthyomyzon gagei* Hubbs and Trautman
Chestnut lamprey, *Ichthyomyzon castaneus* Girard

Gar Family, LEPISOSTEIDAE
Spotted gar, *Lepisosteus oculatus* (Winchell)
Longnose gar, *Lepisosteus osseus* (Linnaeus)
Shortnose gar, *Lepisosteus platostomus* Rafinesque
Alligator gar, *Lepisosteus spatula* (Lacepede)

Bowfin Family, AMIIDAE
Bowfin, *Amia calva* Linnaeus

Freshwater Eel Family, ANGUILLIDAE
American eel, *Anguilla rostrata* (Lesueur)

Herring Family, CLUPEIDAE
Gizzard shad, *Dorosoma cepedianum* (Lesueur)
Threadfin shad, *Dorosoma petenense* (Günther)

Minnow Family, CYPRINIDAE
Blacktail shiner, *Cyprinella venusta* (Girard)
Triploid Grass Carp, *(Ctenopharyngodon idella)*
Common Carp, *Cyprinus carpio* Linnaeus
Cypress minnow, *Hybognathus hayi* Jordan
Striped shiner, *Luxilus chrysocephalus* Rafinesque
Golden shiner, *Notemigonus crysoleucas* (Mitchill)
Emerald shiner, *Notropis atherinoides* Rafinesque
Taillight shiner, *Notropis maculatus* (Hay)
Weed shiner, *Notropis texanus* (Girard)
Mimic shiner, *Notropis volucellus* (Cope)
Bullhead minnow, *Pimephales vigilax* (Baird and Girard)
Creek chub, *Semotilus atromaculatus* (Mitchill)

Sucker Family, CATOSTOMIDAE
Lake chubsucker, *Erimyzon sucetta* (Lacépède)

Smallmouth buffalo, *Ictiobus bubalus* (Rafinesque)
Bigmouth buffalo, *Ictiobus cyprinellus* (Valenciennes)
Black buffalo, *Ictiobus niger* (Rafinesque)
Spotted sucker, *Minytrema melanops* (Rafinesque)

Freshwater Catfish Family, ICTALURIDAE
Black bullhead, *Ameiurus melas* (Rafinesque)
Yellow bullhead, *Ameiurus natalis* (Lesueur)
Tadpole madtom, *Noturus gyrinus* (Mitchill)
Channel Catfish, *Ictalurus punctatus* (Rafinesque)
Flathead Catfish, *Pylodictis olivaris* (Rafinesque)

Pike Family, ESOCIDAE
Grass pickerel, *Esox americanus vermiculatus* (Lesueur)
Chain pickerel, *Esox niger* (Lesueur)

Pirate Perch Family, APHREDODERIDAE
Pirate perch, *Aphredoderus sayanus* (Gilliams)

Killifish Family, CYPRINODONTIDAE
Golden topminnow, *Fundulus chrysotus* (Günther)
Starhead topminnow, *Fundulus dispar* (Agassiz)
Blackstripe topminnow, *Fundulus notatus* (Rafinesque)
Bayou topminnow, *Fundulus nottii* (Agassiz)
Blackspotted topminnow, *Fundulus olivaceus* (Storer)

Livebearer Family, POECILIIDAE
Western mosquitofish, *Gambusia affinis* (Baird and Girard)

Silverside Family, ATHERINIDAE
Brook silverside, *Labidesthes sicculus* (Cope)
Mississippi silverside, *Menidia audens* (Hay)

Temperate Bass Family, PERCICHTHYIDAE
White bass, *Morone chrysops* (Rafinesque)
Yellow bass, *Morone mississippiensis* Jordan and Eigenmann

Sunfish Family, CENTRARCHIDAE
Banded pygmy sunfish, *Elassoma zonatum* (Jordan)
Green sunfish, *Lepomis cyanellus* (Rafinesque)
Warmouth, *Lepomis gulosus* (Cuvier)
Orangespotted sunfish, *Lepomis humilis* (Girard)
Bluegill, *Lepomis macrochirus* (Rafinesque)
Dollar sunfish, *Lepomis marginatus* (Holbrook)
Longear sunfish, *Lepomis megalotis* (Rafinesque)
Redear sunfish, *Lepomis microlophus* (Günther)
Spotted sunfish, *Lepomis punctatus* (Valenciennes)

Bantam sunfish, *Lepomis symmetricus* (Forbes)
Florida largemouth bass, *Micropterus floridanus* Kassler et al.
Northern largemouth bass, *Micropterus salmoides* (Lacépède)
White crappie, *Pomoxis annularis* (Rafinesque)
Black crappie, *Pomoxis nigromaculatus* (Lesueur)

Perch Family, PERCIDAE
Swamp darter, *Etheostoma fusiforme* (Girard)
Slough darter, *Etheostoma gracile* (Girard)
Cypress darter, *Etheostoma proeliare* (Hay)
Logperch, *Percina caprodes* (Rafinesque)

Drum Family, SCIAENIDAE
Freshwater drum, *Aplodinotus grunniens* (Rafinesque)

Nomenclature and phylogenetic order follows Nelson, *et al*. 2004. Common and Scientific Names of Fishes from the United States, Canada, and Mexico, 6th Edition. American Fisheries Society Special Publication 29. 386 pp. Exceptions are noted.

Genetics

Largemouth bass have been collected during fall electrofishing samples and tested for the Florida genome. Total length and weight were recorded for each specimen. Otoliths and livers were removed for age/growth and genetic analysis. Five bass per inch group were analyzed by the LSU genetics laboratory. Samples have been tested for the Florida genome from 1990 – 2007 (Table 6).

Table 6. Largemouth bass genetic results for Saline Lake, LA, 1990 – 2007.

Year	Number	Northern	Florida	Hybrid	Total Florida Influence
1990	25	100%	0%	0%	0%
2003	33	91%	0%	9%	9%
2005	48	94%	2%	4%	6%
2007	60	87%	0%	13%	13%

Threatened/endangered/exotic species

No threatened, endangered or exotic species have been documented at this time. However the possibility exists for exotic species to be found in the lake. Asian carps, including silver, bighead, black, and grass carp have been documented in the Red River. During high water events, access into Saline Lake is unrestricted from the Red River.

WATER USE

Hunting

Yes – Approximately 90 duck blinds are permitted annually

Skiing

None

Scuba Diving

None

Swimming

The majority of the lake is not conducive to swimming due to shallow water, trees and aquatic vegetation. However there is evidence of swimming at several locations in Saline Bayou, between Cedar Bluff and the spillway.

Irrigation

Yes- Camp and home owners utilize lake water to irrigate lawns and gardens.

APPENDIX I

(return to drawdown)

LA DOTD SALINE LAKE DAM INSPECTION REPORT OF MARCH 27, 2013

ECM Consultants, Inc.

Engineers • Architects • Construction Managers

4409 Utica Street, Suite 200
Metairie, LA 70006
Phone (504) 885-4080
Fax: (504) 885-1439

Email: mail@ecmconsultants.com
Web: www.ecmconsultants.com

5420 Corporate Blvd., Suite 306
Baton Rouge, LA 70808
Phone (225) 615-7885
Fax: (225) 615-8548

April 26, 2013

Mr. Bradley A. Sticker, P.E.
Water Resources Engineer
LADOTD District 08
3205 Horseshoe Drive
Alexandria, LA 71301
Tel.: (318) 561-5280, Fax: (318) 561-5288

Re: **Saline Lake Dam Inspection Report**
State ID No. 35-00026
Natchitoches and Winn Parishes

Dear Mr. Sticker:

The above-referenced dam was inspected on March 27, 2013, by members of ECM Consultants, Inc. engineering staff, on behalf of the Louisiana Department of Transportation and Development Dam Safety and Water Resources Section. This periodic inspection was performed under the provisions of the Louisiana Dam Safety Program.

A copy of the inspection report is enclosed. The following items require attention:

1. **Several of the buoy cables upstream of the spillway are broken or disconnected (See Photo No. 17). The cables are to be repaired or reconnected.**

2. **Trees and brush are growing on the embankment where property fences cross the embankment (See Photo No. 10). Trees and brush are encroaching on the downstream slope in several locations (See Photo No. 14). Trees and brush smaller than six-inches in diameter are to be cut from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. Trees six-inches and larger in diameter are to be extracted from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. After removal of the trees, the root ball voids are to be filled and a protective grass cover is to be established on the embankment slopes.**

3. **There are numerous animal burrows in the embankment slopes (See Photo Nos. 7 and 13). Animal burrows are to be filled and compacted.**

Please correct the above listed items and submit written notification of actions taken to: Mr. Bo Bolourchi, P.E., LA DOTD Dam Safety and Water Resources Section at P.O. Box 94245, Baton Rouge, LA 70804-9245, and send us a copy of the letter.

Enclosed also please find the guideline "Sequenced Plant and Animal Penetration Repair Pamphlet" for your information and use.

For additional guidance please see: www.fema.gov/plan/prevent/damfailure/publications.shtm. Review FEMA publications Technical Manual for Dam Owners: Impacts of Animals on Earthen Dams (FEMA 473) and Technical Manual for Dam Owners: Impacts of Plants on Earthen Dams (FEMA 534).

Also enclosed is a performance survey and self-addressed postage paid envelope. Please fill out the survey form and return to DOTD.

Please call me at (504) 885-4080, if you have any questions, or if you require additional information.

Sincerely,

Babak Naghavi, P.E.
Vice President

BN

Enclosures

cc: Mr. Bo Bolourchi, LADOTD
Mr. Ricky Yeldell, LDW&F
Mr. Kelly D. Fannin, Saline Lake Game & Fish Preserve Commission

LADOTD DAM INSPECTION AND EVALUATION REPORT

Inspection Date: March 27, 2013

Report Prepared by	John Rasi, P.E. and Benjamin J. Dow
Reviewed and Approved by	Babak Naghavi, P.E.
Name of Dam	**Saline Lake Dam**
Downstream Hazard	High
State ID No.	35-00026
Parish	Natchitoches (and Winn)
DOTD District	08
District Contact	Jonathan Lachney, P.E., ADA of Engineering

OWNER INFORMATION

Name of Owner	State of Louisiana
Person to Contact	Mr. Bradley A. Sticker, P.E. Water Resources Engineer LADOTD District 08 3205 Horseshoe Drive Alexandria, LA 71301 Tel.: (318) 561-5280 Fax: (318) 561-5288
Additional person to contact	Mr. Ricky Yeldell, Biologist Louisiana Department of Wildlife & Fisheries 5652 Highway 182 Opelousas, LA 70570 Tel.: (337) 948-0255 (Office)
Additional person to contact	Mr. Kelly D. Fannin Saline Lake Game and Fish Preserve Commission 1389 Highway 1232 Winnfield, LA 71483 Tel.: (318) 727-8477

DAM INFORMATION

Location of Dam

The Saline Lake Dam is located in Sections 10, 11, and 12 of Township 10 North, Range 6 West, in Natchitoches Parish, about 7 miles east-northeast of Clarence, Louisiana, and can be found on USGS Quadrangle Maps 76-A and 76-C. A small portion of the embankment and the entire spillway are in Section 13 of Township 10 North, Range 6 West, in Winn Parish.

The spillway is located at latitude 31° 51' 09" N and longitude 92° 55' 53" W. From the intersection of US Highway 84 and US Highway 71 in Clarence, Louisiana, proceed 6.1 miles easterly on LA Highway 84 and turn left onto Chee Chee Dam Road, then proceed 2.2 miles northerly on Chee Chee Dam Road to the south end of the south abutment.

Description of Dam

The Saline Lake Dam consists of about 850 feet of earthen embankment on the south side of the spillway in Winn Parish, a 400-foot wide concrete spillway entirely in Winn Parish, and about 15,400 feet of earthen embankment to the north and west of the spillway, of which about 400 feet is in Winn Parish and 15,000 feet is in Natchitoches Parish. The embankment has a dam crest elevation of 117 feet MSL and the 400-foot wide ungated concrete spillway has a crest elevation of 103 feet MSL. There is a concrete walkway that crosses the spillway. There are three drawdown gate lifts and two fish gate lifts on the spillway walkway. There are three six-foot by six-foot drawdown sluice gates in the face of the spillway wall at an invert elevation of 78.5 feet MSL. There are two six-foot by three-foot fish gates in the face of the spillway wall at an invert elevation of 100 feet MSL.

Dam height is 23 feet.
Structural height is 23 feet.
Hydraulic height is 20 feet.
Maximum discharge is 6,859 cubic feet per second.
Maximum storage is 122,000 acre-feet.
Normal storage is 60,000 acre-feet.
Surface area is 8,450 acres.
Drainage area is 420 square miles.

History of Dam

The Saline Lake Dam was designed by the Louisiana Department of Public Works, constructed by H & H Construction Company and completed in 1992. The Chee Chee Dam was demolished after completion of the Saline Lake Dam.

INSPECTION TEAM

Name	Title	Agency
John Rasi, P.E.	Hydraulic Engineer	ECM Consultants, Inc.
Benjamin J. Dow	Dam Safety Inspector	ECM Consultants, Inc.
Stephen Tassin, P.E.	State Dam Safety Engineer	LADOTD
Brad Sticker, P.E.	Water Resources Engineer	LADOTD District 08
Grady Cross	Engineering Tech. 5	LADOTD District 08

INSPECTION RESULTS

Brief Description of Condition of Dam and Summary of Items Requiring Attention
The Saline Lake Dam is in fair condition. The inspection was made on a clear and sunny day with good visibility. The following items require attention:

1. **Several of the buoy cables upstream of the spillway are broken or disconnected (See Photo No. 17). The cables are to be repaired or reconnected.**
2. **Trees and brush are growing on the embankment where property fences cross the embankment (See Photo No. 10). Trees and brush are encroaching on the downstream slope in several locations (See Photo No. 14). Trees and brush smaller than six-inches in diameter are to be cut from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. Trees six-inches and larger in diameter are to be extracted from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. After removal of the trees, the root ball voids are to be filled and a protective grass cover is to be established on the embankment slopes.**
3. **There are numerous animal burrows in the embankment slopes (See Photo Nos. 7 and 13). Animal burrows are to be filled and compacted.**

Corrected Items from Last Inspection
The embankment was mowed prior to this year's inspection. See Item No. 4, 2012 Report.

Present Pool Elevation (ft)
The pool elevation at the time of inspection was 103.4 feet MSL.

Present Tailwater Elevation (ft)
The tailwater elevation at the time of the inspection was 95.6 feet MSL.

Operation and Maintenance Procedures
Operation and maintenance procedures are the responsibility of the owner. The owner periodically mows the embankment. No other maintenance is obvious. There were no written maintenance or operation records available during the inspection. The drawdown valves are to be lubricated and exercised annually to maintain operability.

EARTH EMBANKMENTS

Dimensions/Shape/Describe Overall Condition
The Saline Lake Dam consists of an approximate 16,250-foot long earthen embankment. Approximately 850 feet of earthen embankment is on the south side of the spillway in Winn Parish. The southern embankment has a crown width of 20 feet and there is a gravel road on top. The upstream and downstream slopes of the southern embankment descend from the crown at a rate of 4H: 1V.

North of the spillway, the earthen embankment meanders northwesterly for about 15,400 feet; all but the first 400 feet in Natchitoches Parish. The northern embankment has a crown width of 15 feet, and the upstream and downstream slopes descend from the crown at a rate of 3H: 1V. The Saline Lake Dam is in fair overall condition.

Upstream Shore Protection
None.

Upstream Slope
The upstream slope of the north embankment descends from the crown at a 3H: 1V rate. There is an embankment slide about 1200 feet along the embankment north of the spillway in a widened section of the embankment where the Chee Chee Dam was demolished that is to be monitored. There are numerous animal burrows in the upstream slope of the north embankment. The upstream slope of the south embankment descends from the crown at a rate of about 4H: 1V. There are numerous cavities of trees that were cut down, but their root systems were not removed. These rather large cavities remaining after the decay of these roots will need to be filled with suitable embankment material in the near future; the fill material must then be protected with grass.

Crown
North of the spillway the crown width is 15 feet and there is grass covering the surface. There are some vehicular ruts in the north embankment crown. There are several property fences that cross the north embankment. Trees and brush are growing in and along the property fences. South of the spillway the crown is about 20 feet wide and there is a gravel road on top.

Downstream Slope
The downstream slope of the north embankment descends from the crown at a 3H: 1V rate. There are numerous animal burrows in the downstream slope of the north embankment. The downstream slope of the south embankment descends from the crown at a rate of about 4H: 1V. There are numerous cavities of trees that were cut down, but their root systems were not removed. These rather large cavities remaining after the decay of these roots will need to be filled with suitable embankment material in the near future; the fill material must then be protected with grass.

Downstream Berm
None.

Downstream Slope (Below Berm)
None.

Area at Embankment Toe and Beyond
The area at the embankment toe and beyond is grassland followed by trees. The embankment toe appears to be in adequate condition.

Drains
None.

Abutments
The south abutment ties into Chee Chee Dam Road and appears adequate. There are some trees growing on the northwestern abutment.

Embankment at Junction of Concrete Structures
The embankment at the junctions with the concrete spillway appears adequate.

Fence
There are the remnants of three fences running transversely to the north embankment, apparently on property lines that have trees and brush growing in and along the fence. The trees, brush, and fences should be removed from the embankment.

SPILLWAY

Type (Ungated)
There is a 400-foot wide ungated concrete spillway with a crest elevation 103.0 feet MSL. There are three six-foot by six-foot drawdown sluice gates in the face of the spillway wall at an invert elevation of 78.5 feet MSL. There are two six-foot by three-foot fish gates near the top of spillway wall at an invert elevation of 100 feet MSL. There are minor random cracks in the spillway non-overflow walls and the north retaining wall. There is vertical displacement of the spillway's north retaining wall, offset by ¾-inch. The retaining wall is to be monitored for movement (See Photo No. 21).

Concrete Weir
The 400-foot wide concrete spillway crest appears to be functioning as intended. Condition of the crest was obscured by water spilling over it.

Stilling Basin
The stilling basin was submerged at the time of the inspection. The stilling basin appears to be adequate. The Red River Waterway pool upstream from Lock and Dam No. 3 keeps the stilling basin flooded year round.

Concrete Sill
The concrete sill was submerged and could not be inspected from above the water surface.

Approach Channel
The approach channel appears adequate. There are warning buoys upstream of the spillway. Several of the buoy cables are broken or disconnected.

Discharge Channel
The discharge channel is Saline Bayou. The discharge channel appears adequate.

Gates and Operations
The three six-foot by six-foot drawdown sluice gates, and the two six-foot by three-foot fish gates are operational.

Drains
None.

OUTLET WORKS

Type and Description
There are three six-foot by six-foot drawdown sluice gates in the face of the spillway wall at an invert elevation of 78.5 feet MSL. There are two six-foot by three-foot fish gates near the top of spillway wall at an invert elevation of 100 feet MSL. The drawdown gates and the fish gates are controlled by gate lifts on the spillway walkway.

Intake Structure
The intake structure has five controlled gate openings in the upstream face of the spillway wall. The upstream openings have debris guards.

Outlet Structure
The outlet structure is the opening in the downstream face of the spillway wall.

Outlet Channel
The outlet channel is the primary spillway discharge channel.

Gates and Related Devices
The three six-foot by six-foot drawdown sluice gates, and the two six-foot by three-foot fish gates are operational.

IRRIGATION STRUCTURE

Type and Description
None.

Intake Structure
None.

Outlet Structure
None.

Outlet Channel
None.

Gates and Related Devices
None.

INSTRUMENTATION

Monumentation/Surveys
None.

Observation Wells
There are observation wells on each side of the spillway.

Weirs
None.

Piezometers
There are two piezometers on each side of the spillway. One has been damaged.

Stream Gage Recorder
None.

RESERVOIR

Slope
The reservoir slopes near the dam appear to be in satisfactory condition and fulfilling their intended purpose.

Bank
The reservoir banks near the dam appear to be in satisfactory condition and fulfilling their intended purpose. There were no obvious areas of bank erosion, displacement, or misalignment.

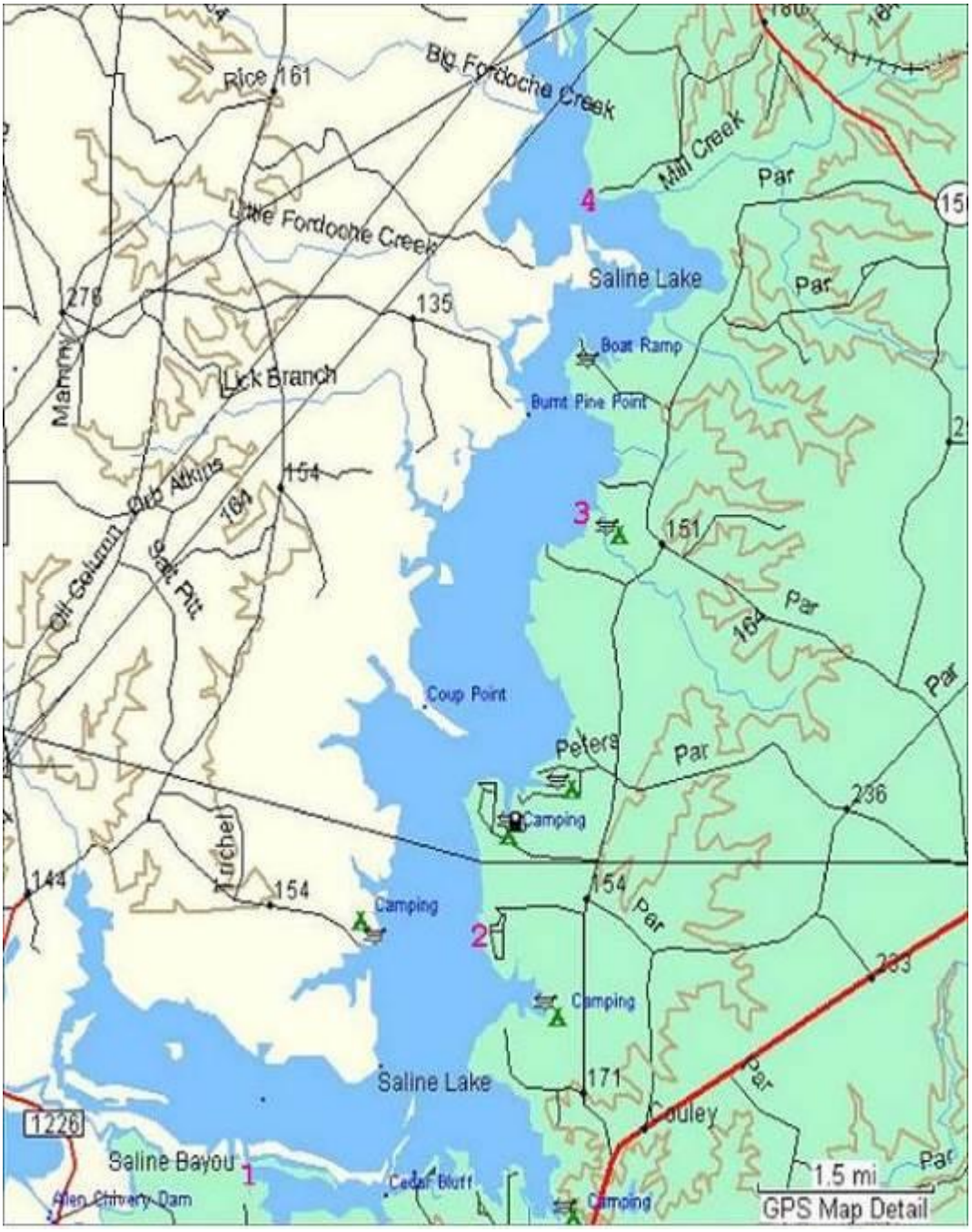
Sedimentation
There were no visible areas of sedimentation occurring within the reservoir at the time of the inspection.

OTHER

Supplemental Photo Documentation Attached.

APPENDIX II
(return to boat ramps)

SALINE LAKE BOAT RAMP LOCATIONS



#1	Spillway Ramp	#3	Keyhole
#2	Mulligan Inn	#4	Sandpoint

APPENDIX III

(return to typemap)

Aquatic Vegetation Surveys

Saline Lake Type Map 2012

April 18, 2012

Conducted by: Ricky Yeldell, Biologist Manager; Sean Kinney, Biologist Supervisor; Villis Dowden, Biologist III; Technicians – Jarrett Thaxton, Jason Corbitt and Wesley Maddox

The lake was surveyed to assess coverage of both submerged and aquatic vegetation. Three crews were deployed with each crew surveying one-third of the waterbody. Skies were clear to partly cloudy with light wind. The lake was above pool stage with water flowing over the spillway.

Giant salvinia *(Salvinia molesta)* was found across the entire waterbody with total coverage noted as 50% for this species. Isolated areas of open water were noted where giant salvinia had been blown away by wind. All areas with dense standing timber held solid coverage of giant salvinia.

Scattered pockets of American lotus *(Nelumbo lutea)*, 200 total acres, Fragrant Water Lily *(Nymphaea odorata)*, 225 total acres, Water hyacinth *(Eichhornia crassipes)*,150 total acres and Duckweed *(Lemna sp.)*, 250 total acres were also noted.

The predominant submerged aquatic species was fanwort (*Cabomba caroliniana)*. Bladderwort *(Utricularia sp.)* and Coontail *(Ceratophyllum demersum)* were found in lesser amounts along with fanwort. The submerged aquatic vegetation coverage found during the survey totaled 6,000 acres or approximately 75% of the lake bottom. Submerged aquatic vegetation was found in all but the deepest depths with those being the main channel of Saline Bayou.

ATTACHMENT IV

Saline Lake USACE Permit for Brush Clearing - 1987

Public Notice

US Army Corps of Engineers
Vicksburg District
P. O. Box 60
Vicksburg, Ms.
39180-0060

APPLICATION NO.
LMKOD-FE 1522-14-6E25-2
EVALUATOR — PHONE NO.
Harold Lee — (601) 634-7104
DATE 20 March 1987
EXPIRATION DATE 6 April 1987

Interested parties are hereby notified that the Vicksburg District is considering an application for a Department of the Army Permit for the work described herein. Comments should be forwarded to the attention of LMKOD-F at the above address and must reach this office by the cited expiration date.

Law Requiring a Permit: Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

RECEIVED
MAR 24 1987
ECOLOGICAL STUDIES

Name of Applicant:

Saline Lake Fish and Game Commission
Mr. James Barron, Chairman
Route 3, Box 398
Winnfield, Louisiana 71483

Location of Work: The proposed work is located in and adjacent to Saline Lake, Winn Parish, Louisiana.

Description of Work: The shallow shoreline around Saline Lake has become overgrown with shrub-type vegetation. The growth is having a detrimental effect on fish spawning in the waterbody. The Saline Fish and Game Commission, working with the Louisiana Department of Wildlife and Fisheries, has developed a plan to remove a portion of the vegetation in order to enhance fish spawning in the lake.

The proposed plan calls for lowering the lake level approximately 8 feet. Once the site has sufficiently dried, heavy equipment including bulldozers and a dragline would be used to clear vegetation in a strip approximately 12 feet wide on the bank and 20-50 feet wide in the lake along the southern and eastern shorelines. Materials resulting from the work would be placed in isolated piles in the lake near the shore. The proposed work would begin in the south at the existing water control structure and end at a point known as Sand Dump on the northeastern shore.

In addition to the removal of vegetation for fish spawning enhancement, existing boat roads would be reestablished using chainsaws to clear the vegetation. No channel excavations are proposed as a part of this work and only shrub and herbaceous type vegetation would be affected by the operation.

The lake draw-down does not require prior authorization and is scheduled to begin immediately. If a permit for the proposal is issued, actual work is scheduled to begin on or about May 30, 1987, and continue for approximately 44 days.

Saline Lake USACE Permit for Brush Clearing - 1987

State Water Quality Permit: Before the Corps of Engineers determines whether or not issuance of the permit is in the public interest, the applicant must obtain certification from the appropriate State pollution control agency that the proposed work will comply with applicable water quality standards and effluent limitations.

Preliminary Review: An Environmental Assessment will be prepared to assess the impacts of the proposed action and to determine the need for an Environmental Impact Statement. An Environmental Impact Statement will be prepared by this office if later developments warrant it. The decision whether or not to issue a permit will be based upon an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which may be expected to accrue from the proposal must be balanced against its expected adverse effects. All factors which may be relevant to the proposal will be considered; among these are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use classification, navigation, recreation, water supply, water quality, energy needs, safety, food requirements and, in general, the needs and welfare of the people. Evaluation of the proposed activity will include application of the guidelines published by the Environmental Protection Agency under authority of Section 404(b) of the Clean Water Act.

Cultural Resources: The National Register of Historic Places has been consulted and it has been determined that there are no properties currently listed in the Register, or eligible for inclusion therein, which would be affected by the proposed work. The consultation of the National Register will constitute the full extent of cultural resources investigation by this office unless we are made aware, as a result of comments received in response to this notice, or by other means, of the existence of specific structures or sites which might be affected by the proposed work.

Endangered Species: Our initial finding is that the proposed work would not affect any endangered species or their critical habitat. This proposal is being coordinated with the U. S. Fish and Wildlife Service, and any comments regarding endangered species or their critical habitat will be addressed in our evaluation of the described work.

Opportunity for a Public Hearing: Any person may make a written request for a public hearing to consider this permit application. This request must be submitted by the specified deadline and must clearly state why a hearing is necessary. Failure of any agency or individual to comment on this notice will be interpreted to mean that there is no objection to the proposed work. Please bring this announcement to the attention of anyone you know who might be interested in this matter.

Elizabeth S. Guynes

Enclosure

Elizabeth S. Guynes
Chief, Evaluation Section

2

Saline Lake USACE Permit for Brush Clearing - 1987